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Identification of Enviro-Eco Indicators for Environmental Sensitivity

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ABSTRACT

Process industries all over the world are diversifying progressively into more capital intensive and energy intensive areas which are continuously degrading the environmental quality. In order to maintain the competitiveness in global market, the industries keep on restructuring and/ or reengineering to ensure desired environmental quality with decreased costs of production, operational safety- cum-flexibility through innovative technology. These goals are intricately linked to waste minimization and overall environmental performance. Considering the future environmental and energy scenarios. Ecomark is now recognised as a pre-requisite for sustainable development and eco-friendly environmental management in industries. The preventive and reactive approaches do not complement each. other in the current practices of environmental pollution prevention as reflected in legislative, administrative and policy formulations. The regulatory frameworks have focussed mainly no pollution control .through end-of-the-pipe (EOP) treatment, which allows wasteful use ofresourcesandthenconsumefurtherresourcestosolvetheenvir onmental problems in a particular medium. However, the practice - in vogue seldom achieves industrial economy since energy intensive cleaner technologies have emerged as a hall mark of industrial production. This calls for an integrated Ecomark approach considering continuous assessment of manufacturing process vis-a-vis state of the art of cleaner technologies of industrial production. This paper addresses itself to the development of Ecomark Indicators with a systems approach concept considering the possibilities of energy saving, raw material saving and water budgeting through consideration of resources of protection of environment as an integrated framework for the practical implementation.

Keywords: Ecosystem/Sustainability/Management/Tools/ Proactive / Ecomark

INTRODUCTION

Today everyone is concerned with environmental issues as they influence all human activities. One business area where environmental issues have received a great deal of discussion in the popular and professional press is marketing. As society becomes more concerned with the natural environment, businesses have already begun to modify their behavior in an attempt to address concepts society's "new" concerns. Some businesses have been quick to accept concepts like environmental management systems and waste minimization and have integrated environmental issues into all organizational activities. Some evidence of this is the development of journals such as "Business Strategy and the Environment" and "Greener Management International", which are specifically designed to disseminate research relating to environmental behavior of business houses. Thustermslike"GreenMarketing","GreenEarthBusiness"and"E nvironmentalMarketing" appear frequently in the popular press.

The concern of the society for the natural environment and drive for making a "Green Earth Business" has led to emergence of "Green Activities" that include Green Marketing, Green Advertising, Green Products, Green Purchasing, Green Supply Chain and Green Shopping. Green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising. Yet defining green marketing is not a simple task. Green or Environmental Marketing consists of all activities designed to generate and facilitate any exchanges intended to satisfy human needs of wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment. In fact, green marketing is the kind of marketing focused on the condition of the earth and human life too. So it teaches us to manage the marketing process for satisfying the needs, wants and demands of customers and society in both profitable and environmentally sustainable ways. The American Marketing Association (AMA) held the first workshop on "Ecological Marketing" in1975.The proceedings of this workshop resulted in one of the first books on green marketing entitled, "Ecological Marketing".

Internationally, environmental labeling programmes are becoming popular. At least, fifteen countries including India have launched the ecolabelling schemes, as shown in Table 1.

Table 1

Country	Name of Programme	Year Started
Germany	Blue angel	1977
Canada	Environmental Choice	1988
Japan	Ecomark	1989
Nordic Countries	White Swan	1989
New Zealand	Environmental Choice	1990
Sweden	Good Environmental Choice	1990
United States	Green Seal	1990
Austria	Austrian Eco-label	1991
India	Ecomark	1991
European Union	European Flower	1992
France	NF-Environment	1992
South Korea	Ecomark	1992
Singapore	Green Label	1992
The Netherlands	StichtingMilieukeur	1992

Croatia	Environmentally Friendly	1993
Source : www.google.com		

The Government of India and few other organizations have made efforts to promote Green Marketing. In 1991, the Government of India instituted a voluntary scheme to label consumer products as environment friendly and to label a green product; the government adopted a sign of "Ecomark". The concept was developed but it never picked up. The main reasons may be that people are not aware of this concept or they have never been made to understand the importance of this concept. The issue of environmental protection has brought the Consumers, The Industry, and The Government to a common platform where each has to play its own role. The government and legislatures are using their influence to reduce environmental and health hazards due to industrialization and to stimulate the development of clean(er) technologies. 'Green products' balance environmental and compatibility with performance, affordability and convenience. They are typically durable, non toxic, recyclable and are often made from recycled materials. Green products have minimal packaging; little embodied energy and carry low environmental impact.

The first Ecomark was awarded some five years ago to a 'Godrej' product, "Ezee," a liquid detergent for washing special /delicate fabrics (such as silk and wool). To increase consumer awareness, the Government of India launched the eco-labeling scheme known as 'Ecomark' in 1991 for easy identification of environment-friendly products. Any product which is made, used or disposed of in a way that significantly reduces the harm it would otherwise cause the environment could be considered as Environment-Friendly Product. The criterion follows a cradle-to-grave approach, i.e. from raw material extraction, to manufacturing, and to disposal. The 'Ecomark' label is awarded to consumer goods which meet the specified environmental criteria and the quality requirements of Indian Standards. Any product with the Ecomark will be the right environmental choice. Environmental labeling is being promoted in a number of countries to encourage cleaner production and raise awareness among consumers of the environmental implications of consumption patterns.

What is Eco-Indicators?

An eco-label is a label which identifies overall environmental preference of a product or service within a particular product/service category based on life cycle consideration. An eco-label is awarded by an impartial third party to products or services which are found to meet established environmental leadership criteria. In India, we come across many advertisements which make false claims about their product and we term this as self-styled "green claims" which have got no authenticity.
ISO has identified three major environmental labelling
Type I - environmental labelling (i.e. "eco labels"),
Type II - "self declaration claims" and
Type III - "environmental declaration like report cards / information labels".

In a typical eco-labelling program, product categories and criteria are established by an independent organization and technical advisory group. Generally, once a category is chosen, life cycle review of a product is conducted and for products this review includes the process of raw material extraction, manufacturing process, distribution process and criteria, use and final disposal of product. The basic differentiating parameters like energy use and toxicity are given maximum importance as they are directly linked to the environment. Organizations which want to participate in such eco-labelling programs are required to pay the licensing fee for seeking permission to use the program's distinctive eco label symbol for a specified period. It must be noted that use of eco label is restricted to the approved products and is usually monitored by managing agency.

Ecomark Scheme

The Ministry of Environment &Forests, Govt. of India has instituted a scheme on labeling of Environment Friendly Products through Gazette Notification No. 71dated 21st February 1991. The scheme is operating on a national basis and provides accreditation and labeling for household and other consumer products which meet certain environmental criteria along with quality requirements of the Indian Standards for that product. The Scheme is known as "ECOMARK". Any product which is made, used or disposed of in a way that significantly reduces the harm it would otherwise cause to the environment, are categorized as environment friendly product. The scheme is voluntary and invites participation from common citizens and concerned industrial sectors in the larger interest of environment.

Objective of the scheme,

The specific objectives of the scheme are as follow:

- ❖ To provide an incentive for manufacturers and importers to reduce adverse environmental impact of products.
- ❖ To reward genuine initiatives by companies to reduce adverse environmental impact of their products.
- ❖ To assist consumers to become environmentally responsible in their daily lives by providing information to take account of environmental factors in their purchase decisions.
- ❖ To encourage citizens to purchase products which have less harmful environmental impacts?
- ❖ Ultimately to improve the quality of the environment and to encourage the sustainable management of resources.

Mechanism of the Scheme

The MoEF has constituted two committees namely Steering Committee and Technical Committee to identify product categories, develop criteria and to coordinate related activities. The Bureau of Indian Standards is to assess and certify products and draw up a contract with the manufacturer, allowing the use of the label, on payment of a fee. The terms of committees shall be for three years or until reconstituted. Of these, the CPCB is a registered member of the Global Ecolabelling Network.

i. ***A Steering Committee,*** set up in the Ministry of Environment and Forests, to determine the product categories for coverage under the scheme and also formulate strategies for promotion, implementation, future development and improvements in the working of the scheme. Determine the product categories to be taken up under the scheme. Create mass awareness for promotion and acceptance of the scheme. Formulate strategies for future development of the scheme.

The functions of the Steering Committee shall be as follows

a) Selection of the logo for the ECOMARK.
b) Activitiesrelatedtocreationofmassawarenessforpromotionandacceptance of the scheme.
c) Determining the product category to be taken up under the scheme.
d) Co-coordinating ways of ensuring that industry is actively involved in the scheme.
e) Securing the involvement of other Ministries, Government Departments, Industry Associations and other Non-Governmental Organizations and Consumer Organisations.
f) Formulations of strategies for future development of the scheme.
g) identifying institutions in India or outside which are engaged in the standardization of any article or process or improvement of quality of any article or process and recommending assistance to build consumer awareness,
h) Promoting programmes of Comparative Testing of products by Consumer Organisations and disseminating their results to the general public.
i) Supporting any research for the formulation of ECOMARK products in the interest of Consumer groups.

In case of special requirement of expertise in specific fields, the committee may invite experts as special invitees. The terms of the Committee shall be for three years or until reconstituted. Besides above central Govt. shall nominate not more than five non-officials to represent the interests of industry, consumer groups or other NGOs of which at least two will represent consumer groups.

ii. ***A Technical Committee*** shall be constituted by the Central Government to identify the individual products and determine the criteria for awarding the ECOMARK. The Committee shall function in the Central Pollution Control Board, Delhi.

The following shall be the functions of the Technical Committee

(i) Identification of specific products for classifying as environment friendly,
(ii) Reviewing the existing state of knowledge and the environmental criteria being followed in other countries.
(iii) Recommend the most appropriate criteria and parameters to designate various products as environment friendly, including the most important criteria or individual products that have been specified for the purpose and their inter-se priority, whenever possible,
(iv) Review the various technologies available for determining the criteria.
(v) Recommend various laboratories and analysts for product assessment to the Ministry of Environment and Forests.
(vi) Evaluation of the environmental impact of the products and criteria from time to time,
(vii) To review from time to time the implementation of the schemes by the Bureau of Indian Standards (BIS), including the sample inspections done by it.
(viii) Set up sub-committees for each product category if so required, including formulation of test programme's for comparative testing of products by consumer organisations.
(ix) The technical committee may set up expert panel for specific products.

The Bureau of Indian Standards (BIS) shall implement the scheme.

Following shall be functions of the BIS:-
(1) Assess the product for Ecomark; certify the product for award of the Ecomark;
(2) Review suspends or cancels a license, for the use of the Ecomark;
(3) Mark inspections, and take such samples for analysis of any material or substances as may be necessary to see whether any article or product in relation to which the Ecomark has been used, conforms to the contract or whether the Ecomark is improperly used in relation to any article or process with or without a license;

a. Certification and Licensing

Under the scheme, the manufacturers shall apply for testing and certification of products which fall under the notified categories in terms of their compliance with published environmental criteria in the prescribed form. The terms and conditions governing operations of license including fees shall be as per the Bureau of Indian Standards Act and the regulations framed there under.

Testing and certification shall be carried out by the Bureau of Indian Standards. For product categories which have the Indian Standards mark, the Bureau of Indian Standards will ordinarily complete the task of certification within a period of three months. Products certified as eligible for the ECOMARK shall be licensed to carry the ECOMARK for a prescribed time period. The product shall be reassessed after the prescribed period and the license fee shall have to be paid again for the mark.

b. Criteria For Ecomark

The criteria are based on the cradle-to-grave approach, i.e. from raw material extractiontomanufacturingandtodisposal.Thebasiccriteriacover broad environmental levels and aspects, but are specific at the product level. A product is examined in terms of the following main environmental impacts:

- That, they have substantially less potential for pollution than other comparable products in production, usage and disposal.

- That, they are recycled, recyclable, made from recycled products or bio-degradable, where comparable products are not;
- That, they make significant contribution to saving non-renewable resources including non-renewable energy sources and natural resources compared with comparable products;
- That, the product must contribute to a reduction of the adverse primary criteria which has the highest environmental impact associated with the use of the product, and which will be specifically set for each of the product categories.

c. Product General Requirements:

The product general requirements; deal with the issues of compliance of the pollution control acts; raising environmental awareness among consumers etc., in addition to safety, quality and performance of the products.

d. Product Specific Requirements:

While determining the product specific retirements, the following issues have been taken into account:

- production process including source of raw materials;
- use of natural resources;
- likely impact of the environment;
- energy conservation in the production of the product;
- effect and extent of waste arising from the production process;
- disposal of the product and its container;
- utilization of "Waste" and recycled materials
- suitability for recycling or packaging; and
- biodegradability

e. Ecomark Logo:



Earthen Pot

An earthen pot has been chosen as the logo for the Ecomark scheme in India. The familiar earthen pot uses a renewable resource like earth, does not produce hazardous waste and consumes little energy in making. Its solid and graceful form represents both strength and fragility; which also characterizes the eco-system.

As a symbol, it puts across its environmental message. Its image has the ability to reach people and can help to promote a greater awareness of the need to be kind to the environment. The logo for the Ecomark Scheme, signifies that the product which carries it does the least damage to the environment

f. Incentives:

As per notification issued by Govt. of Madhya Pradesh Deptt. of Housing & Environment, Dt. 28th Aug. 98 all such industries which have been awarded ECOMARK label for their products shall be given an exemption of 50% fee in the consent/renewal of consent under Water Act / Air Act.

g. Ecomark Criteria of the Product Categories covered under the scheme.

The Government of India has notified the final criteria as depicted in Table 2.

Table 2

SR. No.	Notification on Ecomark criteria for Specific Product Categories	<---- Notification ---->		
		Status	No.	Date
1.	Soaps & Detergents			
	a) Toilet Soaps	Final	188	Apr. 28, 1992
	b) Detergents	Final	188	Apr. 28, 1992
	c) Laundry Soaps	Final	4	Jan. 5, 1994
2.	Paper	Final	455	Nov. 13, 1992
3.	Food Items			
	a) Edible Oils, Tea & Coffee	Final	376	Sep. 6, 1994
	b) Beverages, Infant Foods and Processed Fruits & Vegetable Products	Final	364	Sep. 7, 1995
4.	Lubricating Oils	Final	364	Sep. 7, 1995
5.	Packaging Material/Package			
	a) Paper, Paper Boards & Plastics excluding Laminates	Final	364	Sep. 7, 1995
	b) Laminates and products Thereof	Final	364	Sep. 7, 1995
6.	Architectural Paints & Powder Coatings	Final	364	Sep. 7, 1995
7.	Batteries			
	a) Automotive Lead-Acid Batteries	Final	364	Sep. 7, 1995
	b) Dry Cell Batteries	Final	170	May. 18, 1996
8.	Electrical/Electronic Goods	Final	170	May. 18, 1996
9.	Food Additives	Final	170	May. 18, 1996
10	Wood Substitutes	Final	170	May. 18, 1996
11.	Cosmetics	Final	170	May. 18, 1996
12.	Aerosol Propellants	Final	170	May. 18, 1996
13.	Plastic Products	Final	170	May. 18, 1996
14.	Textiles	Final	322	Oct. 8, 1996

15.	Fire-Extinguishers	Final	160	April 1, 1999
16.	Leather	Final	58	Jan. 27, 2000
Source : Comprehensive Industry document, MEF, 2000.				

APPLICATION PROCEDURE

The procedure for obtaining a license to use the mark is as follows :

A manufacturer desirous to obtain a license to use the Ecomark has to apply to Bureau of Indian Standards (BIS) on the prescribed form with a fee of Rs.500/- per application. The application form may be obtain from BIS directly or its regional/branch offices. A separate application has to be made for each commodity covered by a particular standard. If the standard consists of various parts, separate applications are required for each part. On receipt of an application, BIS arranges a preliminary inspection of the factory to check the testing facilities which the applicant has, and the manner in which the quality control of the product is being exercised during the manufacturing process. Samples are also drawn for testing in an independent laboratory to see whether they conform to the relevant standards. The costs of the samples and the testing are borne by the applicant. A draft scheme of testing and inspection, which specifies the control the applicant is required to maintain for obtaining and operating the license for standard marking, is prepared by the BIS and communicated to the applicant. The rate of marking fee of the product is also communicated to the applicant. A license to use the Ecomark is granted when:

- Full testing facilities are available with the applicant;
- Samples conform to Indian Standards; and
- Formal acceptance of the scheme of testing and inspection, and marking fee rate is received from the applicant.

On grant of a license, the manufacturer is authorized to apply for the Ecomark on the product which conforms to the relevant Indian Standard when tested as per the agreed scheme of testing and inspection appended to the license. The Bureau arranges periodic surprise inspections to check whether the scheme of testing or inspection is being enforced properly. Samples are drawn by the inspecting officers of the Bureau during inspection from the production line/store for testing in BIS and other independent laboratories. In addition, the Bureau arranges to purchase samples of certified products directly from the market or bonafide consumers for testing purposes. The license is granted initially for a period of one year and is renewable subsequently for the same period. The licensee has to apply for renewal one month before the expiry of the validity period of the license. The Bureau may not renew the license if it finds that the scheme has not been complied with or may defer the renewal till such time the applicant is able to operate the scheme satisfactorily.

GOVERNMENTEFFORTSTOWARDSGREENMARKETING-SOME INDIAN CASE EXAMPLES

Institutions and organizations all over India celebrated world environment day on 5th June 2002. Activities relating to promotion of environment were organized which spread over a period of one week. The activities include taking pledge debates, slogan competitions, tree plantation and giving away of awards for achievements to officers and staff of the industries.

- National Thermal Power Corporation (NTPC), Kawar and Reliance Industries Limited (RIL), Hazira, Surat organized program on the occasion of World Environment Day.
- After achieving the distinction of becoming the first Indian passenger car company to be awarded ISO 14001 certification in December 1999 for its Environmental Management Systems (EMS). MUL has taken another step towards its commitment for a cleaner and greener society by launching an innovative program called GSCM (Greening the Supply Chain Management). Through this program, Maruti is going to help it's suppliers ensure environment friendly methods of their operations, products and services.
- The Government of India (GOI) adopted EURO norms for available fuel quality and methods of testing. EURO-I norms in India are known as BHARAT-I norms and EURO-II norms are known as BHARAT-II norms. The central motor vehicle rules 115(11) 1989 says that pollution standards laid down for carbon monoxide and inspected in petrol vehicle should be as under:
  - 2 and 3 wheelers-idling carbon monoxide emission by volume should be 4.5%.
  - 4 wheelers-idling carbon monoxide emissions volume should be 3.0%.

Various norms have been laid down for other toxic gases like sulphur dioxide, nitrous oxide-carbon dioxide etc.

- There are 16 products, categories currently listed for consideration for Ecomarks, like Soaps and detergents, paper, food items, lubricating oils, packaging material, aerosol propellants and many more. The first Ecomark was awarded to Godrej product, "EZEE", a liquid detergent for working on special delicate fabric. Later, "Ecomark" was awarded to Bharat Paper Limited, Bilaspur for the two types of writing and printing paper. Apart from this some hotels in India are opting for "Ecotei" a third party certification program for eco friendly hotels.

CURRENT POSITION: INDIAN ECOMARK SCHEME REMAINS A NON-STARTER

The overall response to the Ecomark program within India itself has been quite limited and manufacturers are hesitant to apply for the Ecomark label. Several factors are seen as possible causes for this hesitation.

- First, the Ecomark scheme is a self-financing program, requiring manufacturers to pay for the application, testing, licensing fee, and renewal costs involved in certification. Some estimates indicate that these costs can amount to a 10 percent increase in a manufacturer's production costs — which are not guaranteed to be returned in increased profits.

➢ Second, products have to comply to BIS's quality standards before being able to apply for the Ecomark. The BIS standards add another layer of regulation and approvals for manufacturers, which are perceived as a burden with few immediate benefits. Additionally, industry has complained that India's Ecomark has not done enough to involve it in product criteria development. Industry feels the Indian Government has "rushed through" with the Ecomark. Industry feels that the labeling program will not help environmental improvement if criteria concentrate on single issues, or if they are based on other programs that do not take the local situation into account. Industry also says that the labeling program inhibits innovation that comes with consumer goods production and can, therefore, be a hindrance to environmental improvements. Finally, industry feels that because of the lack of consumer awareness of environmentally preferable products, the Ecomark program may send consumers the "wrong" message by indicating to consumers that non-Ecomark labeled products are not environmentally safe.

➢ Indian exporters feel that many of the product categories chosen for Ecomark, with the exception of textiles and certain food items, do not reflect India's major export products for which an Ecomark might be of value. Several manufacturers have, in fact, adopted the ecolabeling standards of their importing customers countries in order to operate in those markets. The textile and leather products sectors (two of India's largest exports) have made efforts to conform to ecolabeling standards in EU countries such as Denmark and Germany. Such conformance has been possible through bilateral support from these foreign governments. In response, the Indian Government is now in the process of developing award criteria for the leather and leather products categories. With regard to trade, the Indian Ecomark program does recognize the increasing popularity of eco labeling schemes around the world, and the Ecomark Steering Committee recognizes that, whilst there is a need for greater transparency, voluntary ecolabeling schemes should not be brought under the scope of the technical barriers to trade agreements." As a result, the Indian Government stresses that the Ecomark program is a "purely voluntary scheme open to all manufacturers, both domestic and foreign." The Indian government has already prohibited the handling of 70 "azo" dyes, in response to new regulations by Germany and the EU in place as of early 1996. About 70 percent of dyes manufactured and used in textiles in India contain 'azo' dyes, and about 25 percent (190) of these have been banned in Germany and the EU. Germany and the EU are two of India's largest markets for garments and textiles (10 percent of India's textiles and textile goods exports go to Germany and 50 percent are sold to the EU as a whole). These new regulations are likely to affect India's exports in these sectors. To help exporters understand these new regulations, the Indian Government has set up committees in charge of information dissemination to trade and industry, legal measures, research and development, and identification of substitutes. The committees have asked trade and research associations, export promotion councils, state governments, and other textiles-related organizations, to produce outreach materials (e.g., pamphlets, leaflets, publications, videos, advertisements in daily publications, workshops, and seminars), in both English and local languages, to provide manufacturers with information regarding the regulations. India's Ministry of Environment and Forests has issued restrictions on manufacturing of the 190 banned dyes, as well as placing these dyes on a list of restricted imports under India's Export-Import policy. In addition, a provision in the Textiles (Development and Regulations) Order of 1993 will be included specifying which toxic or harmful dyes and chemicals should not be used in the manufacturing of textiles. In addition, a list of the banned dyes, a list of safe substitutes, product related eco-standards, and a list of guidelines for manufacturing environmentally preferable textiles have been distributed.

➢ The lack of awareness about the Indian Ecomark scheme is evident from the fact that hardly anyone in the industry knows of the existence of such a label. The BIS is the certifying agency, but there is no mention of this label even on its website. And a number of high ranking officials of the three agencies are unaware of the label.

CONCLUSIONS

"ECOMARK" is the buzzword for the environment-conscious consumer of today. However, lack of information and ineffective regulation have resulted in "green washing" - corporations making misleading claims about the environmental benefits of their products or organization. Vague and misleading claims leave the consumer confused and distrustful of such labels. Eco-labeling schemes - which are voluntary, market-based schemes - have been implemented in some countries, with varied degrees of success. In 1991, the Government of India instituted the Ecomark scheme to help consumers identify products that have a reduced environmental impact. Ten years on, few consumers are aware of the existence of the scheme, and almost no products bear the Ecomark label.

Targeting and reaching consumers in a developing country like ours is an extremely difficult task even today. It is because the population is still largely rural, poor and has less access to various media than in more developed countries. As a result they have less information about new products. More over because of poverty, ignorance and illiteracy they often prefer low quality and sometimes hazardous products to fulfill their needs rather than take care of their environment. On the other hand how industries develop, advertise, manage and promote environmentally friendly products is related to both internal firm characteristics and external factors.

The environment is under tremendous stress from rapid industrialization, unplanned urbanization and changing consumption patterns in the race to achieve better living standards. It is amply clear that regulatory actions by pollution control agencies alone can not restore the environment to its pristine state. Pro-active and promotional roles should also be geared up in harmony with the overall environmental protection strategy. The time has come for consumers to take the lead in prompting manufacturers to adopt clean and eco-friendly technologies and environmentally-safe disposal of

used products, along with preventive and mitigate approaches. Some of the guiding principles should be:

1. Voluntary participation
2. Compliance to environmental and other relevant legislations
3. It must be based on sound scientific and engineering principles.
4. Criteria must be credible, relevant, attainable and measurable.
5. It should be open and accountable.
6. It must be consistent with ISO guidelines.

India urgently needs policy concepts, legal requirements and market strategies to promote product stewardship, producer responsibility and waste minimization. Many lessons can be drawn and adapted from legislation around the world - such as California's deposit-return systems, or Mexico's requirement that 50% of Coca-Cola be sold in reusable bottles - and from market strategies like 'lotteries' using ring-tabs on PET bottles to bring in post-consumer waste. India also needs to explore economic instruments to prevent pollution, promote waste minimization and require life-cycle responsibility on the part of manufacturers and marketers of all products.

The government, central and state, quasi-government bodies and other local institutions, which constitute nearly 80 per cent of buyers of goods, should set an example by insisting on eco-products giving a price and priority preference to them. If the government and other state institutions do not have faith in certified goods, be they ISI or Eco-marked, then the common consumer too will not choose such products. The industry puts a scare that eco-labeled products will cost more and hence, consumers will shift to others (unlabelled), particularly in price-sensitive ones.A small but significant precedent has been set by the State of Karnataka this year, with an enhanced Road Tax for motor vehicles over 15 years old. Worldwide, social responsibility has been awakened only by legislation. Civil society in India has yet to take the lead in drafting and lobbying for waste reduction laws like those prevalent in North America and Europe. The media has a real role to play to spread the message of environmental safety. Needless to say, the environmental regime has to be reoriented and strengthened with more expert mechanism to deal with the larger spectrum of problems hitherto unattended by law.

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